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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/018,091	04/04/2002	Lothar Doehring	635.40828X00	4776

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EXAMINER

LISH, PETER J

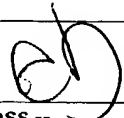
ART UNIT

PAPER NUMBER

1754

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/018,091	Applicant(s) DOEHRING ET AL.	
	Examiner Peter J Lish	Art Unit 1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/14/01, 03/06/02</u> | 6) <input type="checkbox"/> Other: _____  |

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### **DETAILED ACTION**

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 17, 27, and 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 17 and 38 recite "nearly devoid of ultrafine components". It is indefinite as to what amounts falls within the limitation "nearly devoid". It is also indefinite as to what sizes fall within the limitation "ultrafine".

Claim 27 recites that the filling ratio be higher when the radioactive material is substituted for conventional fillers, however, this limitation is unclear and indefinite as to the basis for comparison. What is the minimum ratio required?

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 17-22, 25-27, and 30-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Roy et al. (US 5,545,796).

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Roy et al. teaches a method for the production of an article for the storage or isolation of contaminated material, such as radioactive waste, where the article itself is made in part from radioactive waste. The article is made up of binder such as cement or thermoset resin, filler aggregate particles such as sand, fumed silica, and flyash particles, and radioactive waste aggregate particles or fibers. A variety of these aggregate particles, having different particle sizes, are included in the binder in order to produce a high-density product having a substantially complete interior void volume filling. In one embodiment, Roy et al. teaches the addition of radioactive metal fibers having lengths from about 0.5 to 20 cm and a length:width ratio of between 200:1 and 20:1 as the radioactive material. No difference is seen between the process or casting of Roy et al. and that of the instantly claimed invention.

Claims 17-22, 25-27, and 30-31 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Roy et al.

Roy et al. teaches a method for the production of an article for the storage or isolation of contaminated material, such as radioactive waste, where the article itself is made in part from radioactive waste. The article is made up of binder such as cement or thermoset resin, filler aggregate particles such as sand, fumed silica, and flyash particles, and radioactive waste aggregate particles or fibers. A variety of these aggregate particles, having different particle sizes, are included in the binder in order to produce a high-density product having a substantially complete interior void volume filling. The radioactive fibers which are added have lengths from about 0.5 to 20 cm and a length:width ratio of between 200:1 and 20:1. Both the radioactive metal particles and the radioactive gravel or concrete particles which are added to the binder

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have diameters between 0.001 mm and 30 mm. Amorphous metal particles have a thickness of from about 0.01 to about 30 mm.

It is not explicitly taught that less than 30 wt%, preferably less than 15 wt%, of the radioactive material have sizes that are less than 250 microns (0.25 mm), or that less than 20 wt% of the radioactive material have sizes that are less than 200 microns (0.20 mm). However, it is expected that this be the case due to the amount of large particles and fibers which are used.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17-22, 25-27, and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roy et al.

Roy et al. teaches a method for the production of an article for the storage or isolation of contaminated material, such as radioactive waste, where the article itself is made in part from radioactive waste. The article is made up of binder such as cement or thermoset resin, filler aggregate particles such as sand, fumed silica, and flyash particles, and radioactive waste aggregate particles or fibers. A variety of these aggregate particles, having different particle sizes, are included in the binder in order to produce a high-density product having a substantially complete interior void volume filling. The radioactive fibers which are added have lengths from

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about 0.5 to 20 cm and a length:width ratio of between 200:1 and 20:1. Both the radioactive metal particles and the radioactive gravel or concrete particles which are added to the binder have diameters between 0.001 mm and 30 mm. Amorphous metal particles have a thickness of from about 0.01 to about 30 mm.

It is not explicitly taught that less than 30 wt%, preferably less than 15 wt%, of the radioactive material have sizes that are less than 250 microns (0.25 mm), or that less than 20 wt% of the radioactive material have sizes that are less than 200 microns (0.20 mm). However, the radioactive particles represent the largest aggregate particles in the binder, whereby the additional filler particles, such as sand, flyash and fumed silica, contain particles that fill the fine void spaces having sizes less than 0.25 and 0.20 mm. It therefore would have been obvious to one of ordinary skill, to use radioactive particles having sizes mostly above 0.25 mm, in order to provide for efficient void volume filling.

Claims 23-24, 29, and 32-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roy et al. as applied to claims 17-22, 25-27, and 30-31 above, and further in view of DE 3131798 A1.

Roy et al. is applied above. Roy et al. do not explicitly teach the use of radioactive reactor graphite as one of the radioactive materials to be included in the article.

DE '798 teaches a process for the wet grinding of radioactive reactor graphite to particles having sizes of less than 60 mm, preferably sizes between 8 and 30 mm. The radioactive graphite particles of DE '798 are then mixed with cement to form blocks for permanent storage.

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It would have been obvious to one of ordinary skill at the time of invention to use the graphite particles of DE '798 in the articles of Roy et al. in order to permanently store them, and because they are radioactive waste particles which fit within the desired size ranges of Roy et al.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roy et al. as applied to claims 17-22, 25-27, and 30-31 above, and further in view of Laske et al. (US 4,732,705).

Roy et al. does not explicitly teach the use of a corrosion-resistant or sulfate-resistant cement, however, it would have been obvious to one of ordinary skill at the time of invention to use such a cement in the process of Roy et al., because Laske et al. teaches that varying demands must be met for cement solidified radioactive waste, including high compressive strength, good water resistance, a low leach rate, and high sulfate resistance.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Lish whose telephone number is 571-272-1354. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



STUART L. HENDRICKSON  
PRIMARY EXAMINER

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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